IN THE CLAIMS

Please cancel claim 1.

Please add new claims 2-33.

~~WHAT IS CLAIMED IS:~~

1. (Cancelled)

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2. (New) A power module comprising:

a first substrate populated with power semiconductor chips having a first placement side;

a second substrate populated with signal semiconductor chips having a second placement side, the first and second substrates in the power module being oriented parallel one above the other and the first and second placement sides being arranged facing one another; and

one or more bonding wires configured in a hingelike manner electrically connecting the first and second placement sides to one another.

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28. 27
3. (New) The power module of claim 2, comprising wherein the signal semiconductor chips are connected via conductor tracks on the second substrate and the bonding wires to the power semiconductor chips on the first substrate via external conductors.

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4. (New) The power module of claim 2, comprising wherein the power semiconductor chips on the first substrate are connected via bonding wires directly on the first substrate among one another and to inner flat conductor ends of external flat conductors.

30. (New) The power module of claim 27, comprising wherein the bonding wires bent comprise aluminum.

31. (New) The power module of claim 27, comprising wherein the bonding wires have a diameter of between 100 and 300 micrometers.

32. (New) A power module comprising:

a first substrate populated with power semiconductor chips having a first placement side;

a second substrate populated with signal semiconductor chips having a second placement side, the first and second substrates in the power module being oriented parallel one above the other and the first and second placement sides being arranged facing one another; and

bonding wires bent in a hingelike manner electrically connecting the first and second placement sides to one another and defining the distance between the first and second substrates and mechanically fixing them in a plastic housing.

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33. (New) The power module of claim 32, comprising wherein the first substrate comprises a ceramic board.

34. (New) The power module of claim 32, wherein the first substrate comprises a multilayer ceramic board.

35. (New) The power module of claim 32, wherein the second substrate comprises a printed circuit board made of glass-fiber-reinforced plastic.

36. (New) The power module of claim 32, wherein the second comprises a multilayer printed circuit board comprising glass-fiber-reinforced plastic.

37. (New) The power module of claim 32, comprising wherein the second substrate populated with signal semiconductor chips includes logic semiconductor components.

38. (New) The power module of claim 32, comprising wherein the second substrate populated with signal semiconductor chips includes semiconductor chips with integrated control circuits.

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39. (New) The power module of claim 32, comprising wherein the second substrate populated with signal semiconductor chips includes semiconductor chips with integrated driver circuits.

40. (New) The power module of claim 32, comprising wherein the second substrate populated with signal semiconductor chips includes semiconductor chips with temperature sensors.

41. (New) The power module of claim 32, comprising wherein the second substrate populated with signal semiconductor chips includes semiconductor chips with passive components.

42. (New) The power module of claim 32, comprising wherein the first substrate populated with power semiconductor chips includes semiconductor chips with insulated gate bipolar power transistors.

43. (New) The power module of claim 32, comprising wherein the first substrate populated with power semiconductor chips includes semiconductor chips with metal oxide power field effect transistors.

44. ~~19.~~ (New) A power module comprising:

a first substrate populated with power semiconductor chips having a first placement side;

a second substrate populated with signal semiconductor chips having a second placement side, the first and second substrates in the power module being oriented parallel one above the other and the first and second placement sides being arranged facing one another; and

a plurality of bonding wires bent in a hingelike manner electrically connecting the first and second placement sides to one another and defining the distance between the first and second substrates and mechanically fixing the first and second substrates in a plastic housing, wherein the signal semiconductor chips are connected via conductor tracks on the second substrate and the bonding wires bent in hinge-type fashion to the power semiconductor chips on the first substrate electrically and/or to external flat conductors.

45. ~~20.~~ (New) The power module of claim 44, comprising wherein the power semiconductor chips on the first substrate are connected via bonding wires and/or conductor tracks directly on the first substrate among one another and to inner flat conductor ends of external flat conductors.

46. ~~21.~~ (New) The power module of claim 45, comprising wherein the bonding wires bent in hinge-type fashion comprise aluminum and/or an aluminum alloy.

47. ~~22.~~ (New) The power module of claim 46, comprising wherein the bonding wires bent in hinge-type fashion have a diameter of between 100 and 300 micrometers.

48. ~~23.~~ (New) A power module comprising:

a first substrate populated with power semiconductor chips having a first placement side;

a second substrate populated with signal semiconductor chips having a second placement side, the first and second substrates in the power module being oriented parallel one above the other and the first and second placement sides being arranged facing one another; and

means for bonding configured in a hingelike manner electrically connecting the first and second placement sides to one another and defining the distance between the first and second substrates and mechanically fixing them in a plastic housing.

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49. ~~24.~~ (New) A method for producing a power module having a first substrate populated with power semiconductor chips, and having a second substrate populated with signal semiconductor chips, the substrates in the power module being oriented parallel one above the other and their placement sides being arranged facing one another, and bonding wires bent in a hingelike manner electrically connecting the two placement sides to one another and defining the distance between the first and second substrates and mechanically fixing them, the method comprising:

providing a first substrate populated with power semiconductor chips, and a second substrate populated with signal semiconductor chips;

orientating the first substrate and second substrate such that their placement sides are arranged next to one another and edge regions of the placement sides of the two substrates that have bonding areas lie next to one another;

connecting the first substrate and the second substrate at edge regions having bonding areas to bonding wires arranged next to one another in hinge-type fashion;

folding over of the second substrate through 180° with bending of the bonding wires arranged in hinge-type fashion, so that the substrates are oriented parallel one above the other and the first placement side and the second placement side are arranged facing one another; and

packaging of the power module in a plastic housing.

50. ~~25.~~ (New) The method of claim ~~24~~ 49, comprising where in order to provide a first substrate with power semiconductor chips, coating a ceramic board with a conductor track structure having, in an edge region, a row of bonding areas arranged next to one another with a predetermined grid dimension, the power semiconductor chips being arranged on the first substrate and being connected among one another and also to the conductor track structure via bonding wires with the bonding area row being left free, and in addition, on the ceramic board, inner flat conductor ends of external flat conductors being fixed with connection to the conductor track structure.

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51. ~~26.~~ (New) The method of claim ~~25~~ 50, comprising where in order to provide a second substrate with signal semiconductor chips, providing a printed circuit board with a conductor track structure having, in an edge region, a row of bonding areas arranged next to one another, the number and grid dimension of which correspond to the bonding area row of the first substrate, the signal semiconductor chips being arranged on the second substrate and being connected among one another and also to the conductor track structure via bonding wires with the bonding area row being left free.

52. ~~27.~~ (New) The method of claim ~~24~~ 49, comprising where in order to orient the two substrates, arranging the bonding area rows of the substrates next to one another, so that it is possible to produce bonding wires on the oriented bonding areas of the two substrates that are adapted to one another.

53. ~~28.~~ (New) The method of claim ~~24~~ 49, comprising connecting the substrates by application of bonding wires between the bonding areas by means of thermocompression sonic bonding of aluminum and/or aluminum alloy bonding wires with a diameter of between 100 and 300 micrometers.

54. ~~29.~~ (New) The method of claim ~~24~~ 49, comprising folding over the second substrate through

180° with bending of the bonding wires arranged in hinge-type fashion, so that the substrates are oriented parallel one above the other and their placement sides are arranged facing one another, using a vacuum tool.

55. 30. (New) The method of claim ~~24~~ 49, comprising packaging of the power module in a plastic housing by means of injection molding technology with the substrates arranged one above the other being embedded in a plastic housing composition.

56. 31. (New) The method of claim ~~24~~ 49, comprising in that the packaging of the power module in a plastic housing is effected by arranging the two substrates in a prefabricated plastic housing and the cavities between the substrates and the prefabricated plastic housing are filled with silicone composition.

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57. 32. (New) The method of claim ~~24~~ 49, comprising wherein before the power module is packaged in a plastic housing, mounting the first substrate on a metal board made of copper or a copper alloy as heat sink, the metal board forming an outer wall of the plastic housing.

58. 33. (New) The method of claim ~~24~~ 49, comprising wherein after the power module has been packaged in a plastic housing, external flat conductors project from the plastic housing, which are electrically connected to the power semiconductor chips and via the bonding wires bent in hinge-type fashion to the signal semiconductor chips, external flat conductors having a larger cross section than external flat conductors for signal semiconductor chips being used as external flat conductors for the power semiconductor chips.